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## Notes on *Carex*—I

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The following notes are chiefly the result of an endeavor to name a large amount of material which has accumulated in the New York Botanical Garden, and which collectors as a rule have not attempted to name.

### ***Carex saximontana* sp. nov.**

A tufted, very leafy species, allied to *Carex durifolia* Bailey. Leaves strongly glaucous, much exceeding the culms, 15–30 cm. long, 3–5 mm. wide, rough on the margins and on the midnerve below; culms leafless or nearly so, from very short to 15 cm. long, triangular, slightly roughened and winged on the lower portions, strongly winged above; pistillate flowers 2–5, on a zigzag, triangular, winged rachis, each subtended by a bract, the lower two or three of which are enlarged, leaf-like, saccate, and exceed the inflorescence, being from 7 to 35 mm. long and 2–6 mm. wide; the upper scale-like, ovate-lanceolate, acuminate, hyaline, shorter than the perigynia; staminate spike sessile, 3 mm. long, exceeded by the upper perigynium; perigynium glabrous, the body oblong-orbicular tapering to a stipitate base 0.5 mm. long, and rather abruptly contracted into a short, hyaline, slightly toothed beak less than or barely 1 mm. long, the whole perigynium about 4 mm. long, the body being about 2 mm. wide and 2.5 mm. long, two of the nerves prominent, the others very inconspicuous; achene oblong-orbicular, completely filling the perigynium, 3-lined, but otherwise not triangular.

Readily distinguished from *Carex durifolia* Bailey (*Carex Backii* Boott), to which it has been referred, by the glaucous leaves; by the perigynia, which in *C. durifolia* exceed 5 mm. in length, are oblong-lanceolate and gradually taper into the greenish, hardly-toothed, stout beak; and by the upper scales or bracts, which in *C. durifolia* resemble the lower, are green and much exceed the perigynia. The "*Carex Backii* Boott" of the Rocky Mountains.

Type in Herb. N. Y. Bot. Garden, collected by Carl F. Baker

in the foothills of north Colorado, near Ft. Collins, altitude 5,500 feet, May 24, 1896.

To this species also belong the following, collected in Wyoming :

Sheridan county, Big Horn Mountains, *Tweedy* 2251, July 2, 1899; head-waters of Clear Creek, Big Horn Mountains, *Tweedy* 3334, July 20-Aug. 15, 1900.

***Carex concinnoides* sp. nov.**

Plants strongly stoloniferous, the culms arising singly, slender, smooth, 25 cm. or less high. Leaves crowded at the base of the culm, the sheaths reddish-brown, strongly striate and more or less filamentose, the blades flat, glabrous, more or less glaucous, shorter than the culm, 20 cm. or less long, 2-4 mm. wide; culm bearing 2-4 bladeless long-acuminate sheaths at base, which are usually tinged with purplish-red; pistillate spikes one or two, approximate at the summit of the culm, erect, sessile or short-peduncled, 5-10-flowered, 5-10 mm. long and 4-5 mm. wide; the bract much shorter than the spike, usually tinged with reddish-purple and hyaline on the margins above; scales ovate-lanceolate, narrower and shorter than the perigynia, acute, reddish-purple with hyaline margins; perigynium 2.5-3 mm. long, 1.5 mm. wide, the body oblong-elliptical, tapering to a short stipitate base and rather abruptly contracted into a short entire beak 0.5 mm. long, strongly loosely pubescent; staminate spike short, sessile or nearly so, 8-15 mm. long, 2-3 mm. wide, the scales broadly ovate, purplish-brown with a hyaline margin; achenes closely enveloped by the perigynia, 2 mm. long.

This species may be distinguished from *Carex Richardsonii* R. Br. and *Carex concinna* R. Br., to which it is related, by the following key :

Staminate spike 3-6 mm. long; scales obtuse, one-half the length of the perigynia.

*C. concinna.*

Staminate spike 8-22 mm. long; scales acute to acuminate, from little shorter than to exceeding the perigynia.

Perigynia loosely pubescent, wider and longer than the scales; staminate spike nearly sessile; pistillate spikes few-flowered.

*C. concinnoides.*

Perigynia appressed-pubescent, narrower and shorter than the scales; staminate spike noticeably peduncled; pistillate spikes many-flowered.

*C. Richardsonii.*

The type-specimen of this pretty little species was collected by R. S. Williams at Columbia Falls, Montana, on June 7 and July 28, 1893, and is in the New York Botanical Garden Herbarium.

The following specimens also belong here :

IDAHO : Moscow Mt., Latah County, *Abrams* 636, May, 1906.

BRITISH COLUMBIA : Selkirk Mountains, near  $51^{\circ} 30''$ , *Sharv* 77a, July 1, 1904 ; Deer Park, Columbia River, *Macoun* 56, June 6, 1890.

ALBERTA : Banff, *Macoun* 7464, June 26, 1891 (very young).

***Carex mediterranea* sp. nov.**

A strongly tufted species, the culms 35 cm. or less high, usually about 25 cm., and about twice exceeding in length the leaves, triangular, smooth below, rough on the angles above. Leaves flat, long-acuminate, 2.5–4 mm. wide, typically about 10 cm. long, smoothish above, roughened below, especially towards the apex ; spikes densely aggregated in a solitary terminal head 10–17 mm. long and about 10 mm. wide, the spikes bearing a few inconspicuous staminate flowers above and ten to many pistillate flowers below, the bracts awl-shaped, long-cuspidate, much shorter than the head ; perigynium ascending or spreading, 3.5 mm. long, 2.25 mm. wide, the body ovate, flattened, margined, round-tapering at base, tapering above to the serrulate, bidentate beak, which occupies about  $\frac{1}{3}$  of the perigynium, nerveless on the inner surface, nerved on the outer ; scales ovate, cuspidate, brownish-hyaline with a green midrib, from slightly shorter to slightly longer than the perigynia and usually a little narrower ; achene lenticular, nearly orbicular, 1.5 mm. long, very short-stipitate ; stigmas 2.

The above species, which is not uncommon from the District of Columbia westward to Kansas, has a strong outward resemblance to *Carex cephalophora* Muhl. and has usually been referred to that species, which is also common in the same range. The reference of specimens of this plant, however, to *Carex Muhlenbergii* Schkr., and even to *Carex grvida* Bailey, shows that it has given much trouble to students and collectors. As a matter of fact its nearest relative is *Carex Muhlenbergii* Schkr., and this last-named species is, of course, exceedingly close to *Carex grvida* Bailey. In short, the plant may be described as having the aspect, leaves and head of *Carex cephalophora*, while it has the perigynia and scales of *Carex Muhlenbergii*. The following key will serve to distinguish some of the closely related species of this group :

Heads short, rarely interrupted, 8–20 mm. long.

Scales much exceeded by the perigynia.

Perigynia ovate-lanceolate or narrower ; leaves 2.5–4 mm. wide.

*C. cephalophora*.

Perigynia ovate-orbicular; leaves 1-2 mm. wide. *C. Leavenworthii*.  
Scales about the length of the perigynia.

Perigynia 3.5 mm. or less long; culms twice the length of the leaves.  
*C. mediterranea*.

Perigynia exceeding 3.5 mm. in length; culms little exceeding the upper leaves. *C. grvida*.

Heads long, usually interrupted, 15-35 mm. long. *C. Muhlenbergii*.

The type-specimen was collected by E. S. Steele at Washington, D. C., May 23, 1898, distributed as *Carex grvida*, and is in my private herbarium. Other specimens referable to this species are:

TENNESSEE: Knoxville, *Ruth* 10925, July, 1897, and 107, June, 1898.

MISSOURI: Jackson County, *Mackenzie*, June 4, 1899 and June 10, 1900, and June 13, 1900; St. Louis, *Glatfelter*, 1894 and 1895.

KANSAS: Cherokee County, *Hitchcock* 1019, May 7, 1897.

#### ***Carex agglomerata* sp. nov.**

A strongly tufted plant, the culms 6 dm. or less high, usually considerably exceeding the leaves, triangular, smooth below, slightly rough on the angles immediately below the head. Leaves regularly and evenly distributed on the lower part of the culm and not chiefly tufted near the base, flat, 3-4 mm. wide, 10-20 cm. long, smooth towards the base, roughened towards the apex and on the margins; spikes densely aggregated in a solitary terminal head, 10 mm. wide, 25-35 mm. long, the lower usually slightly separated, the spikes bearing the few inconspicuous staminate flowers above, and the ten to many pistillate flowers below, the bracts awl-shaped, elongate, those of the lower spikes, at least, usually conspicuous, but much shorter than the heads; perigynium ascending or spreading, about 3.25 mm. long and 2 mm. wide, the body ovate, flattened, margined, round-tapering at base, tapering into the serrulate, bidentate beak, which occupies one half the length of the perigynium, nerveless on the inner face, nerved on the outer; scales ovate, hyaline with a green midrib, acuminate to cuspidate, the body about the length of the body of the perigynia, but somewhat narrower; achene lenticular, oblong-orbicular, 2 mm. long, very short-stipitate; stigmas 2.

Heretofore referred to the more northern *Carex cephaloidea* Dewey, but always with doubt; this species may be distinguished from that species, as well as from the polymorphous *Carex Muhlenbergii* Schkr. and *Carex grvida* Bailey, as follows:

Bracts not elongate; scales one half length of body of perigynia; culm-angles strongly serrulate. *C. cephaloidea*.

Some of the bracts elongate; scales equaling body of perigynia or longer; culm-angles roughened beneath head only.

Scales equaling body of perigynia; beak as long as body of perigynia.

*C. agglomerata*.

Scales equaling or exceeding perigynia; beak shorter than body of perigynia.

*C. Muhlenbergii*.

*Carex agglomerata* is the plant referred to *Carex cephaloidea* at page 52 of the Manual of the Flora of Jackson County, Missouri. The type-specimen was collected by B. F. Bush at Courtney, Jackson County, Missouri, *no. 1718*, on May 25, 1902, at which place it is rather common in the woods along the Missouri River bluffs, where it was also collected by myself on May 23, 1896. The same species has been collected by E. S. Steele near Washington, D. C., June 5, 1901. It doubtless occurs in the intermediate territory, but the almost total absence of collectors in that region easily accounts for its non-appearance in collections.